

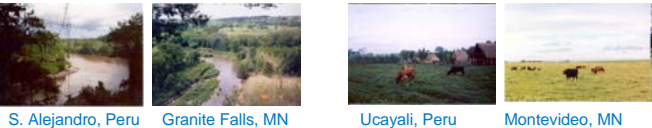


2004 EPA STAR Graduate Fellowship Conference Next Generation Scientists—Next Opportunities

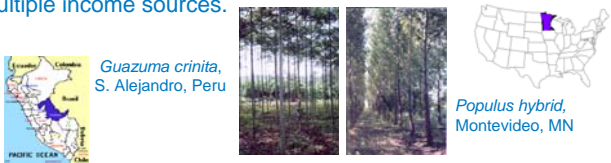
Social capital and policy in agroforestry systems of southern Minnesota and Peruvian Amazon

Agroforestry and adoption

- Standard agricultural practices contribute to poor water quality and loss of soil fertility.¹
 - In southern Minnesota, nitrogen and phosphorus leach from corn and soybean monocultures into rivers and lakes.
 - In Amazonian Peru, slash-and-burn agriculture and coca cultivation accelerate deforestation, erosion, and sedimentation.



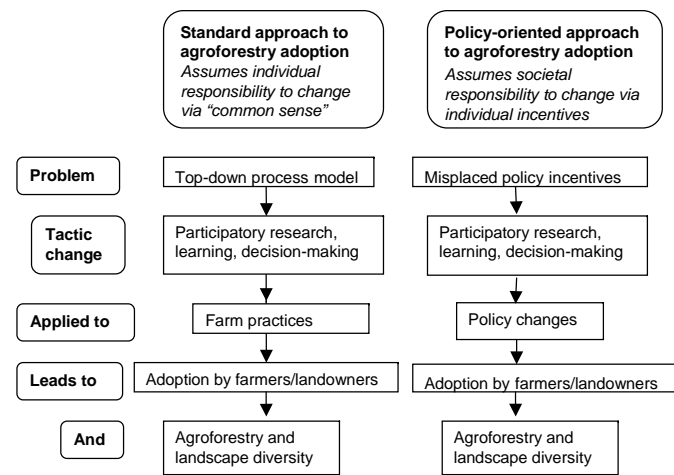
- Agroforestry and crop diversification can provide environmental/economic benefits.²
 - Perennial crop roots can hold soil, prevent erosion and mineral leaching, and minimize fertilizer/pesticide application.
 - Diversified plantings minimize risk of crop failures and provide multiple income sources.



- Then why is agroforestry not widely adopted?
 - Many adoption models fault a top-down extension approach, and advocate participatory processes for farmers and scientists.³
 - While participatory methods are important, they can become derailed by low levels of trust and social capital, and may not address the role of policy incentives in farmer decision-making.

Role of policy in farmer decisions

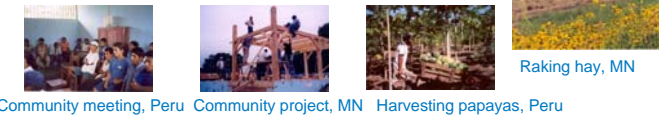
- Extension agencies benefit from a model of participation that recognizes policy incentives.



- Key policies impacting agroforestry:
 - Minnesota: agricultural commodity subsidies, CSP
 - Peru: coca eradication policies, trade agreements
- Hypothesis: Stakeholder perceptions of and involvement in policy development will influence the success of participatory processes promoting agroforestry and landscape diversity.

Study methods and impacts

- Study methodologies
 - Semi-structured interviews with stakeholders^a
 - Stakeholder analyses of roles and perceptions^o



- Cross-cultural comparisons

	Southern Minnesota	Peruvian Amazon
Ultimate goal	Economic development with environmental conservation	Economic development with environmental conservation
Functional goal	Landscape diversity (including agroforestry)	Landscape diversity (including agroforestry)
Obstacles	Corn and soybean monocultures	Slash-and-burn agriculture Coca plantations
Underlying policy issues	Agricultural commodity subsidies	Coca eradication politics
Possible solutions	Changes in legislation (CSP?)	Changes in legislation and enforcement
Obstacles to change or policy involvement	•Limited trust/collaboration with government, universities, and NGOs •Limited financial capital in rural areas. •Land prices	•Limited trust/collaboration with government, universities, and NGOs •Limited financial capital in rural areas •Transport, market access

- Expected results: Recognizing the necessity of stakeholder involvement in agroforestry policy can improve participatory processes for land use change.

1. Brooks et al. 1992; Pulgar-Vidal 2004 2. Garrett & Buck 1997; MacDicken & Vergara 1990 3. Feder et al. 1999; Rogers 1995 a. Abbot & Gujit 1998 o. Bryson 2002